

What is claimed is:

1. A multiprocessor system comprising:

a plurality of CPU cells that are each provided with at least one CPU
wherein said CPU cells are divided among a plurality of groups, each of said
5 groups operating under a different operating system; and
device cells that are connected to said CPU cells by way of a network,
comprising;

devices that are shared among said plurality of CPU cells; and
device control units that are each provided with device control
10 information for controlling a plurality of types of processing that can be
executed by said devices, that are each provided with said device control unit
that, upon receiving commands from said CPU cells, searches device control
information that corresponds to the originator of said command and causes
said devices to execute processing that is designated by said device control
15 information that has been updated by said command.

2. The multiprocessor system according to claim 1, wherein said
device control information is provided to correspond to each of said plurality
of CPU cells.

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3. The multiprocessor system according to claim 1, wherein said
device control information is provided in any number of sets that does not
match the number of said groups or the number of said CPU cells.

25 4. The multiprocessor system according to claim 1, wherein:
said CPU cells hold, in table format, information on said devices that

said CPU cells can use; and

each of said CPU cells preferentially uses devices that are assigned to that CPU cell at the time of system start-up.

5 5. The multiprocessor system according to claim 1, wherein:
 said device cells are provided with a plurality of similar devices;
and

 said device control units cause any device from among said
plurality of devices to execute processes that are designated by said device
10 control information.

 6. The multiprocessor system according to claim 1, wherein:
 said CPU cells are each provided with a command
transmission circuit for generating commands in which are combined a
15 plurality of instructions that are issued from said CPUs;
 said device cells are each provided with a command analysis
unit for parsing said commands and extracting a plurality of instructions; and
 said device control units cause said devices to execute
processing that is designated by said device control information that has
20 been updated by the plurality of extracted instructions.

 7. The multiprocessor system according to claim 1, wherein:
 said CPU cells hold system identifiers for specifying said
groups to which said CPU cells belong;
25 said device cells hold system configuration information that is
constituted of lists of CPU cells that correspond to said system identifiers;

said device cells select any one CPU cell from among groups to which the CPU cells belong based on said system configuration information that is held and said system identifiers that are transmitted from said CPU cells together with said commands, and transmit response
5 messages that contain processing results for the commands to the selected CPU cells; and

CPU cells, upon receiving said response messages from said device cells, acquire processing results of said device cells in accordance with the response messages.

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8. A device sharing method for sharing devices in a multiprocessor system that includes a plurality of CPU cells that are each provided with at least one CPU, said CPU cells being divided into a plurality of groups, each of these groups operating under a different operating system;
15 said method comprising the steps of:

storing a device control information for controlling a plurality of types of processing that can be executed by devices, to device cells that include said devices and that are connected to said CPU cells by way of a network;

in said device cells, upon receiving commands from said CPU cells,
20 searching a device control information that corresponds to the originators of the commands; and

in said device, executing a processing that is designated by said device control information that has been updated by said commands.

25 9. The device sharing method according to claim 8, wherein said device control information is provided to correspond to each of said plurality

of CPU cells.

10. The device sharing method according to claim 8, wherein said device control information is provided in any number of sets that does not
5 match the number of said groups or the number of said CPU cells.

11. The device sharing method according to claim 8, wherein:
said CPU cells hold, in a table format, information on said devices that said CPU cells can use; and
10 each of said CPU cells preferentially uses devices that are assigned to that CPU cell at the time of system start-up.

12. The device sharing method according to claim 8, wherein:
said device cells are provided with a plurality of similar devices;
15 and
said device cells cause any device among said plurality of devices to execute processing that is designated by said device control information.

20 13. The device sharing method according to claim 8, wherein:
said CPU cells are each provided with a command transmission circuit for generating commands in which are combined a plurality of instructions that are issued from said CPUs;
said device cells are each provided with a command analysis
25 unit for parsing said commands and extracting a plurality of instructions; and
said devices are caused to execute processes that are

designated by said device control information that has been updated by the plurality of extracted instructions.

14. The device sharing method according to claim 8, wherein:
- 5 said CPU cells hold system identifiers for specifying said groups to which said CPU cells belong;
- said device cells hold system configuration information that is constituted from lists of CPU cells that correspond to said system identifiers;
- said device cells select any one of said CPU cells from among
- 10 the group to which the CPU cells belong based on said system identifiers that are transmitted together with said commands from said CPU cells and said system configuration information that is held, and transmit response messages to the selected CPU cells that contain processing results in response to said commands;
- 15 said CPU cells, upon receiving said response messages from said device cells, acquire the processing results of said device cells in accordance with the response messages.